PATENT
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HALFTONING USING DOT AND LINE SCREENS TO AVOID TWO AND THREE COLOR MOIRÉ

CROSS REFERENCE TO RELATED APPLICATIONS

This application is a continuation-in-part of U.S patent application serial number 09/698,104 filed October 30, 2000, now U. S. patent no. 6,798,539 B1.

BACKGROUND OF THE INVENTION

1. Field of the Invention

This invention is directed to a process for substantially moiré-free halftoning color documents using combinations of cluster screens and line screens.

2. Description of Related Art

With the advent of inexpensive digital color printers, methods and systems of color digital halftoning have become increasingly important. It is well understood that most digital color printers operate in a binary mode, i.e., for each color separation, a corresponding color spot is either printed or not printed at a specified location or pixel. Digital halftoning controls the printing of color spots, where spatially averaging the printed color spots of all the color separations provides the illusion of the required continuous color tones.

The most common halftone technique is screening, which compares the required continuous color tone level of each pixel for each color separation with one of several predetermined threshold levels. The predetermined threshold levels are stored in a halftone cell, which is spatially replicated and tiled to form a halftone screen that is the size of a given image. If the required color tone level is darker than the threshold halftone level, a color spot is printed at the specified pixel. Otherwise the color spot is not printed. It is understood in the art that the distribution of printed pixels depends on